Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1.-31. (Canceled)

32. (Previously Presented) A cell structure which is a cylindrical cell structure comprising a plurality of cells which pierce through the structure between two end faces and are flow paths for fluid, an outer wall which encloses the cells and a cavity which pierces in the direction of a central axis of the structure through a portion including the central axis or a given axis parallel to the central axis:

wherein the cell structure further has an inner wall on the inner surface of the cavity, the cells are partitioned in the form of a honeycomb with partition walls, and a strength index represented by the formula:

$$\text{strength index} = (T/CP)^2 \times (B/A)^2$$

is not less than 0.02 in which T denotes a thickness (mm) of the partition wall, CP denotes a cell pitch (mm), A denotes a length (mm) of a line formed by linking, along the outer wall, points of intersection of the outer wall with two tangent lines which contact with inner contour of the inner wall and extend in parallel in longitudinal direction of the partition wall, and B denotes a distance (mm) between a point of contact of the tangent line with the inner contour of the inner wall and a point of intersection of the tangent line with the closest outer wall at the section formed by cutting the cell structure along a plane perpendicular to the central axis of the cell structure.

33. (Previously Presented) A cell structure according to claim 32, wherein the strength index is not less than 0.04.

34. (Previously Presented) A cell structure according to claim 32, wherein the cell structure has a plurality of cavities and a plurality of the cavities are disposed so as to give a

value of B/A larger than the maximum value of B/A of a cell structure having one cavity of a volume equal to the total volume of a plurality of the cavities.

35. (Previously Presented) A cell structure which is a cylindrical cell structure of a foam structure comprising a plurality of cells which pierce through the structure between two end faces and are flow paths for fluid, an outer wall which encloses the cells and a cavity which pierces in the direction of a central axis of the structure through a portion including the central axis or a given axis parallel to the central axis, where the cell structure further has an inner wall on the inner surface of the cavity, and the cells communicate three-dimensionally with each other through intercellular walls.

36. (Currently Amended) A cell structure according to claim 35, wherein the inner wall has a thickness of not less than 1% of a representative radius of the ~~cavity~~cavity;

wherein when the cavity is a circle the representative radius is the radius of the circle,

wherein when the cavity is a tetragram the representative radius is the radius of a first imaginary circle the entirely circumscribes the tetragram, and

wherein when the cavity is an oval the representative radius is the radius of a second imaginary circle that is the largest circle that can inscribe the oval.

37. (Previously Presented) A cell structure according to claim 32, wherein the ratio (d/D) of a representative inner diameter (d) to a representative outer diameter (D) of the honeycomb structure or foam structure is not more than 0.5, when a section formed by cutting the cell along a plane perpendicular to the central axis being tetragonal or hexagonal, and the ratio (d/D) of a representative inner diameter (d) to a representative outer diameter (D) of the honeycomb structure or foam structure is not more than 0.8, when the section formed by cutting the cell along a plane perpendicular to the central axis being triangle or wavy.

38. (Currently Amended) A cell structure according to claim 32, wherein among the partition walls or intercellular walls, the thickness of a partition wall (first or second

reinforcing partition wall) or an intercellular wall (first or second intercellular wall) positioned ~~at a given distance~~within a predetermined distance from the inner wall in diameter direction is larger than the thickness of other partition walls (ordinary partition walls) or intercellular walls (ordinary intercellular walls).

39. (Previously Presented) A cell structure according to claim 38, wherein, among the partition walls or intercellular walls, the thickness of at least one partition wall (a third or fourth reinforcing partition wall) or at least one intercellular wall (a third or fourth reinforcing intercellular wall), the tip of which contacts with the inner wall, which contacts with the inner wall or which is externally apart from the inner wall is larger than the thickness of other partition walls (ordinary partition wall) or intercellular walls (ordinary intercellular walls), when a section formed by cutting the cell along a plane perpendicular to the central axis being tetragonal.

40. (Previously Presented) A cell structure according to claim 32, wherein among the cells, a cell density of a given number of cells (first or second reinforcing cells) positioned at a given distance from the inner wall in diameter direction is higher than the cell density of the cells (ordinary cells) other than the first or second reinforcing cells.

41. (Previously Presented) A cell structure according to claim 32, wherein, among the cells, a given number of cells (third reinforcing cells) positioned at a given distance from the central axis in diameter direction is partitioned with at least one partition wall (fifth reinforcing partition wall) or intercellular wall (fifth reinforcing intercellular wall) which divides the inside of the cells.

42. (Previously Presented) A cell structure according to claim 32, wherein a partition wall (sixth reinforcing partition wall) or intercellular wall (sixth reinforcing intercellular wall) which contact with the inner wall has thick wall portions formed at the contact portions.

43. (Currently Amended) A cell structure according to claim 32, wherein among the cells, a given number of cells (fourth reinforcing cells) positioned at a given distance from the inner wall in diameter direction is filled in their cell passages with a non-gaseous material for filling cells.

44. (Previously Presented) A cell structure according to claim 32, wherein among the partition walls or intercellular walls, a partition wall (seventh reinforcing partition wall) or intercellular wall (seventh reinforcing intercellular wall) positioned at a given distance from the inner wall in diameter direction is more densified than other partition walls (ordinary partition walls) or intercellular walls (ordinary intercellular walls).

45. (Previously Presented) A cell structure according to claim 32, wherein the partition walls or intercellular walls comprise a partition wall (eighth reinforcing partition wall) concentric with the inner wall and partition wall (ninth reinforcing partition wall) radial from the central axis, or an intercellular wall (eighth reinforcing intercellular wall) concentric with the inner wall and intercellular wall (ninth reinforcing intercellular wall) radial from the central axis.

46. (Previously Presented) A cell structure according to claim 32, wherein the partition walls or intercellular walls comprise a partition wall (tenth reinforcing partition wall) concentric with the inner wall and wavy partition wall (eleventh reinforcing partition wall), or intercellular wall (tenth reinforcing intercellular wall) concentric with the inner wall and wavy intercellular wall (eleventh reinforcing intercellular wall).

47. (Previously Presented) A cell structure according to claim 32, wherein the partition walls or intercellular walls comprise a partition wall (twelfth reinforcing partition wall) concentric with the inner wall and corrugated partition wall (thirteenth reinforcing partition wall), or intercellular wall (twelfth reinforcing intercellular wall) concentric with the inner wall and corrugated intercellular wall (thirteenth reinforcing intercellular wall).

48. (Previously Presented) A cell structure according to claim 32, wherein the honeycomb structure or the foam structure comprises at least one component selected from the group consisting of the following component (a), component (b), component (c) and component (d):

(a): ceramic materials containing at least one compound selected from the group consisting of cordierite, alumina, mullite, lithium aluminum silicate, aluminum titanate, titania, zirconia, silicon nitride, aluminum nitride, silicon carbide, calcium silicate, zirconium phosphate, zirconyl phosphate, ceria, yttria and magnesia,

(b): ceramic materials containing composites of the compounds shown in (a),

(c): heat resistant metals,

(d): adsorptive materials containing at least one selected from the group consisting of active carbon, silica gel and zeolite.

49. (Previously Presented) A cell structure according to claim 32, wherein an inner wall comprises a material higher in mechanical strength than the partition wall or the intercellular wall.

50. (Previously Presented) A cell structure according to claim 32, wherein a reinforcing material concentric with the inner wall is provided on the inner surface side of the inner wall, and a cushioning member having compressibility and elasticity is provided between the inner surface of the inner wall and the reinforcing material.

51. (Previously Presented) A method for producing a cell structure which comprises extruding a ceramic material from a die having a plurality of grooves formed in the form of slit and firing the extruded product to produce a cell structure having a plurality of cells partitioned with partition walls;

wherein ceramic material is extruded from the grooves formed in the form of slit of the die in such a state that a press platen having a given shape for the formation of an inner

wall is provided above the central portion of an end face of the die on the side from which the ceramic material is extruded and a guide for uniformly flowing the ceramic material is provided underneath the press platen for the formation of the inner wall on the side of the die into which the ceramic material is introduced, and wherein the resulting extruded product is fired, thereby to produce a cell structure having a plurality of cells, a cavity which pierces the portion including the central axis or a given axis parallel to the central axis in the direction of the central axis, and an inner wall on the inner surface of the cavity.

52. (Previously Presented) A method for producing a cell structure which comprises extruding a ceramic material from a die having a plurality of grooves formed in the form of slit and firing the extruded product to produce a cell structure having a plurality of cells partitioned with partition walls;

wherein the ceramic material is extruded from the grooves formed in the form of slit in such a state of masking the grooves formed in the form of slit positioned above the central portion of the end face of the die, said end face is the side from which the ceramic material is extruded, and wherein the resulting extruded product is fired, thereby to produce a first cell structure having a cavity at which the partition walls are bared and, furthermore, a given coating material is coated on the inner surface of the cavity of the resulting first cell structure to form an inner wall, thereby to produce a second cell structure having a plurality of the cells, the cavity which pierces the portion including the central axis or a given axis parallel to the central axis in the direction of the central axis, and the inner wall on the inner surface of the cavity.

53. (Previously Presented) A method for producing a cell structure which comprises extruding a ceramic material from a die having a plurality of grooves formed in the form of slit and firing the extruded product to produce a cell structure having a plurality of cells partitioned with partition walls;

wherein the ceramic material is extruded from the die and the resulting extruded product is fired, thereby to obtain a third cell structure having a plurality of cells partitioned with the partition walls, and the cells of the third cell structure which are positioned at a given distance from the central axis in diameter direction among a plurality of the cells are bored in the direction of central axis to form a cavity, thereby to obtain a fourth cell structure and simultaneously an inner wall is formed on the inner surface of the cavity of the fourth cell structure.

54. (Previously Presented) A catalyst structure comprising a cell structure and a catalyst component, wherein the cell structure is a cylindrical cell structure comprising a plurality of cells which pierce through the structure between two end faces and are flow paths for fluid, an outer wall which encloses the cells and a cavity which pierces in the direction of a central axis of the structure through a portion including the central axis or a given axis parallel to the central axis:

wherein the cell structure further has an inner wall on the inner surface of the cavity, the cells are partitioned in the form of a honeycomb with partition walls, and a strength index represented by the formula:

$$\text{strength index} = (T/CP)^2 \times (B/A)^2$$

is not less than 0.02 in which T denotes a thickness (mm) of the partition wall, CP denotes a cell pitch (mm), A denotes a length (mm) of a line formed by linking, along the outer wall, points of intersection of the outer wall with two tangent lines which contact with inner contour of the inner wall and extend in parallel in longitudinal direction of the partition wall, and B denotes a distance (mm) between a point of contact of the tangent line with the inner contour of the inner wall and a point of intersection of the tangent line with the closest outer wall at the section formed by cutting the cell structure along a plane perpendicular to the central axis of the cell structure, and the catalyst component for purification of exhaust gas

and/or a adsorptive component are supported on the surface of the partition walls or intercellular walls constituting the cell structure and/or on the surface of inside pores of the cell structure.

55. (Previously Presented) A catalyst structure according to claim 54, wherein both ends of the cells are alternately sealed so that a fluid passing through the cells as flow paths is passed through the inside of the partition walls or intercellular walls.

56. (Previously Presented) A catalyst structure according to claim 54, wherein the adsorptive component is mainly composed of zeolite.